

Olin Corporation

EPA ID Number: NYD002123461

Other (Former) Names of Site

None

Site Description

The Olin Niagara Falls Plant (the APlant®), comprised of two separate lots, is located south of Buffalo Avenue in Niagara Falls, approximately 1,000 feet north of the Upper Niagara River. Historically, Olin produced chlorine and caustic soda from rock salt (sodium chloride) using various modifications of the mercury-cell/chlor-alkali process. In the past, Mercury cells were operated on both plant sites, but they are no longer in operation.

Olin also manufactured several organic chemicals, including trichlorobenzene, trichlorophenol, and hexachlorocyclohexane (BHC), but production of those chemicals stopped after a production-related accident (explosion) severely damaged the production facility in 1956. Production of chlorine, caustic and organic chemicals has ceased. Olin currently manufactures sodium hypochlorite for use in swimming pools.

The smaller (6 acre) western site (Plant 1) is separated from Plant 2 by Chemical Road and by 300 feet of property owned by E.I. Dupont de Nemours and Company (Dupont). Plant 2 (16 acres) is divided into two sections by Alundum Road (private). The eastern margin of the operating area of Plant 2 is bounded by Gill Creek, a small channelized stream flowing to the Niagara River. Only when these facilities are discussed individually are the numeric designations used.

On the east side of Gill Creek, Olin also owns the property bounded by Gill Creek, Dupont Road, and Buffalo Avenue. Most of this property is currently leased to Dupont for employee parking. The Olin Plant is located in a heavy industrial area. Plant 1 is bounded on the west and south by former production facilities owned by the Carborundum Company. The Olin property is bounded on the east by the Solvent Chemicals Site (also referred to as the 3163 Buffalo Avenue Site), a former chemical plant and disposal site currently being investigated by the Department.

Adjacent to Plant 2 to the south is the Dupont Niagara Plant, which has conducted environmental investigations and remedial actions pursuant to a Consent Order with the New York State Department of Environmental Conservation (NYSDEC).

Site Regulatory Responsibility and Legal Instrument

Administrative Order on Consent, 3008(h) entered into on April 14, 1997.

Permit Status

There are currently no permitted units at this facility.

Potential Threats and Contaminants

Olin Corporation completed a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) in 1994 and a Corrective Measures Study (CMS) in 1995. The RFI identified impacts to groundwater and soil, and the CMS recommended corrective measures to remedy such impacts. The RFI/CMS documented mercury presence in soils throughout the Plant. Concentrations ranged from less than 1 to 15,600 mg/kg (ppm).

The distribution of mercury did not correlate with locations of Solid Waste Management Units (SWMUs), suggesting that the sources of mercury were handling losses during past Plant operations, rather than releases from specific SWMUs. Elevated concentrations of hexachlorocyclohexane (BHC) (ranging from <1 to 171 mg/kg total BHCs) were observed near the former BHC production area of Plant 2. The RFI concluded that three plumes of contaminated groundwater, each with a different source, are present beneath the Plant. Potential Olin-derived chemicals were present in groundwater sampled from the monitoring wells in the area of Plant 2 located between Alundum Road and Gill Creek (ARGC Area).

A more concentrated and widespread plume of groundwater contamination emanates from the Dupont plant (south of Olin) and has migrated throughout the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Study Area. The third plume is migrating from the Solvent Chemical Site. The RFI and Corrective Measures Study have been approved by the New York State Department of Environmental Conservation (NYSDEC) and by the United States Environmental Protection Agency (USEPA).

The plume of groundwater contamination which appears to be derived from Olin sources consists primarily of benzene, and chlorinated benzene compounds with lower levels of hexachlorocyclohexane, chlorinated phenols, methanol and mercury. The highest concentrations of these chemicals at the Olin Plant occur in the bedrock between Alundum Road and Gill Creek.

In summary, Olin has concluded that hazardous waste constituents are present in the fill/soil and groundwater beneath the Plant. The most significant source of Olin generated contaminants is between Alundum Road and Gill Creek (ARGC Area) of Plant 2. Lesser concentrations of these contaminants have been measured in other parts of the Plant. Another significant source of groundwater contamination is a plume that has migrated onto and throughout the Olin Plant from the Dupont Plant to the south.

Cleanup Approach and Progress

Because of the long-term potential for off-site migration, the NYS Department of Environmental Conservation determined that impacted groundwater is the primary threat to human health and the environment at the Olin facility. The final remedy incorporates groundwater containment and recovery in the bedrock A, B and C Zones and in the overburden, maintenance of existing infiltration controls (caps and pavement) and groundwater monitoring to assess the effectiveness of the remedy. The cleanup objectives are to prevent current and future exposure to impacted groundwater and soils through treatment and/or containment, reduce the migration of contaminants from soil to groundwater, and reduce the migration of contaminants through the groundwater.

Olin operates two production wells in the eastern portion of Plant 1. The wells are approximately 20 feet apart and only one well is pumped at any given time. Therefore, the wells are considered to be one withdrawal point and are referred to collectively as the Olin Production Well. The Olin Production Well is open in the bedrock and below and is pumped at an average rate of approximately 600 gallons per minute (GPM). Under its remedial commitment to the state of New York, Dupont is required to operate the Olin Production Well. Most groundwater in the C- and D-Zones west of Gill Creek appears to be captured by the Olin Production Well.

The pumped groundwater is treated using an activated carbon adsorption system prior to being discharged. The Olin Production Well creates cones of depression in the C-/D-Zone and, through induced leakage, in the B-Zone. Other features influencing groundwater flow in the A- and B-Zones are the sanitary sewers beneath Buffalo Avenue and a Dupont sanitary sewer located along the east side of Gill Creek to Buffalo Avenue.

Based upon the historical data which were developed as a result of the site investigations, New York State Department of Environmental Conservation determined that the long-term remedy for the facility should be based upon the use of a "pump and treat" remedial technology to address impacted groundwater, and continued use of infiltration controls (paving) and institutional measures (deed restrictions) to address impacted soils.

The remedy is designed to prevent erosion and fugitive dust emissions of the soils. Through time, any residual contaminants in the soils will leach into the groundwater and subsequently be collected by the groundwater recovery wells. The remedy for the groundwater requires maintenance of "capture zones" in the contaminated aquifers beneath the Plant. These capture zones will prevent the continuing spread of the contaminant plumes from the site and should ultimately result in restoration of the aquifers. The groundwater recovery system began operating in early 1998.

Site Repository

Copies of supporting technical documents and correspondence cited in this site fact sheet are available for public review at:

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